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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,916	10/30/2003	Clayton Smith	2180-001	5649

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EXAMINER

FEELY, MICHAEL J

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 07/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.



<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/695,916	SMITH ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Michael J. Feely	1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 May 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-56 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 42 and 48 is/are allowed.
- 6) ☒ Claim(s) 1-41, 45-47 and 51-56 is/are rejected.
- 7) ☒ Claim(s) 43-47, 49, 50, 52, 53, 55 and 56 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>20040305</u>  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Pending Claims***

Claims 1-56 are pending.

### ***Election/Restrictions***

1. After further consideration, the species election requirement has been withdrawn.
2. After further consideration, the restriction requirement has been withdrawn.

### ***Claim Objections***

3. Claims 43 & 44, 46 & 47, 49 & 50, 52 & 53, and 55 & 56 are objected to because of the following informalities: their dependencies appear to be improper. Claims 43 & 44 are dependent from claim 38, but should be dependent from claim 42; claims 46 & 47 are dependent from claim 41, but should be dependent from claim 45; claims 49 & 50 are dependent from claim 44, but should be dependent from claim 48; claims 52 & 53 are dependent from claim 47, but should be dependent from claim 51, and claims 55 & 56 are dependent from claim 50, but should be dependent from claim 54. Appropriate correction is required.
4. Claims 45-47 are objected to because of the following informalities: claim 45 ends with the word “and” and without a period. Claims 46 and 47 are objected to because they are dependent from claim 45. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-13, 17, 27-32, 45-47, and 54-56 are rejected under 35 U.S.C. 102(b) as being anticipated by Foley (US Pat. No. 3,728,277).

Regarding claims 1-6, 10-13, 17, and 27, Foley disclose: (1) a packer fluid for use in a wellbore containing wellbore fluid (column 1, lines 13-19 and 44-50), the packer fluid comprising: an aqueous additive fluid adapted for addition to the wellbore fluid (column 1, lines 13-19; column 4, lines 43-72); and a non-toxic, environmentally acceptable capping fluid (column 1, lines 13-19; column 4, line 73 through column 5, line 9), wherein the additive fluid and capping fluid having different densities, the capping fluid having a density lighter than the additive fluid and the wellbore fluid (*inherent of the materials set forth in Foley*) for locating adjacent a frost penetration layer adjacent a top of the wellbore (*the emulsion would have inherently provided "capping" fluid through the entire depth of the well, including the frost penetration layer at the top*), the additive fluid being miscible with the wellbore fluid (*inherent of the materials set forth in Foley*), and the capping fluid being substantially immiscible with the additive fluid and the wellbore fluid (*inherent of the materials set forth in Foley*); and additives, being at least a corrosion inhibitor (column 1, lines 13-19), and being dispersible within the additive fluid and the wellbore fluid (*inherent of the materials set forth in Foley*), and the

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additives in the additive fluid further being substantially immiscible with the capping fluid  
(*inherent of the materials set forth in Foley*);

(2) wherein the additives further comprise at least one or more of a scale inhibitor, a salt inhibitor, and oxygen scavenger, a non-emulsifier and a biocide (column 5, lines 20-34); (5) wherein the corrosion inhibitor comprises a range from 0% to about 50% by weight of the additive fluid (column 1, lines 13-19; column 4, lines 43-57); (6) wherein the scale inhibitor comprises a range from 0% to about 5% by weight of the packer fluid (column 5, lines 20-34); (10) wherein the non-emulsifier comprises a range from 0% to about 10% (column 5, lines 20-34); (17) wherein the scale inhibitor is selected from the group consisting of *see claim for list* (column 5, lines 20-34); (27) wherein the non-emulsifier is selected from the group consisting of resin oxyalkylate, diepoxide, alkyl polyol, and mixtures thereof (column 5, lines 20-34);

(3) wherein the non-toxic environmentally acceptable capping fluid is non-aqueous, immiscible with aqueous fluids (column 4, line 73 through column 5, line 9), has a pour point between  $-100^{\circ}\text{C}$  and  $0^{\circ}\text{C}$  and a density less than 1.0 g/L (*inherent of the materials set forth in Foley*);

(4) wherein the capping fluid volume is sufficient to fill a depth of the wellbore to the frost penetration layer and the additive volume is calculated to provide about 0.05L of additive fluid per meter depth of the wellbore (column 4, lines 43-57);

(11) wherein the non-toxic environmentally friendly capping fluid is selected from the group consisting of *see claim for list* (column 4, line 73 through column 5, line 9); (12) wherein the non-toxic environmentally friendly capping fluid is a synthetically cracked hydrocarbon (column 4, line 73 through column 5, line 9); and

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(13) wherein the corrosion inhibitor is selected from the group consisting of *see claim for list* (column 1, lines 13-19).

Regarding claims 7-9, the ranges of these material quantities include 0%. These limitations are anticipated because they are not required.

Regarding claims 28-32, the teachings of Foley are as set forth above in claims 1, 2, 11-13 and incorporated herein to satisfy the limitations of claims 28-32.

Regarding claims 45-47, the teachings of Foley are as set forth above in claims 1-3 and incorporated herein to satisfy the limitations of claims 45-47. The emulsion would have inherently provided “capping” fluid through the entire depth of the well, including the frost penetration layer at the top.

Regarding claims 54-56, the teachings of Foley are as set forth above in claims 1-3 and incorporated herein to satisfy the limitations of claims 54-56.

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

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2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 20-22, 37, and 51-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foley (US Pat. No. 3,728,277) in view of Poelker et al. (US Pat. No. 6,100,221).

Regarding claims 20-22 and 37, Foley disclose, "The water-in-oil emulsions of the present invention have the advantages of being capable of being prepared in a *wide variety of water or aqueous electrolyte solutions*, and, in addition, of being stable for extended periods of time at elevated temperatures, and exhibiting little or no tendency to invert into oil-in-water emulsions," (see column 4, lines 58-63). However, he provides little detail of the aqueous solution or additives thereof, beyond his corrosion inhibitor and those discussed in column 5.

Poelker et al. disclose an aqueous external dispersion that is useful as a crystal modifier for petroleum or a petroleum-derived liquid (Abstract). The dispersion includes additives, such as scale inhibitors, corrosion inhibitors, and bactericides (column 6, lines 41-44). The dispersion also includes a dispersant, wherein the preferred dispersant comprises: **(20 & 37)** a non-ionic

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surfactant (column 4, lines 14-20; column 4, line 64 through column 5, line 23), generally selected from *(21 & 22)* ethoxylated nonyl phenol and ethoxylated linear alcohol (column 4, line 64 through column 5, line 23). The dispersion is added to petroleum or petroleum-derived liquids in a well environment to improve cold flow, depress pour point, and reduce viscosity and/or paraffin deposit (see column 3, lines 35-45).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide an aqueous dispersion featuring the salt inhibitors of instant claims 20-22 and 37, as taught by Poelker et al., in the emulsion of Foley because Foley uses his emulsion as a packing fluid and allows for a wide variety aqueous solutions, and Poelker et al. provide an aqueous external dispersion that is added to petroleum or petroleum-derived liquids in a well environment to improve cold flow, depress pour point, and reduce viscosity and/or paraffin deposit.

Regarding claims 51-53, the combined teachings of Foley and Poelker et al. are as set forth above and incorporated herein to satisfy the limitations of claims 51-53. The aqueous solution is prepared separately before being added to and emulsified with the oleaginous fluid.

11. Claims 14-16, 18, 19, 23-25, 33-36, and 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Foley (US Pat. No. 3,728,277) and Poelker et al. (US Pat. No. 6,100,221) in view of McDougall et al. (US Pat. No. 4,738,897).

Regarding claims 14-16, 18, 19, 23-25, 33-36, and 38-40, the combined teachings of Foley and Poelker et al. are as set forth above and incorporated herein. Poelker et al. discuss the



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addition of numerous additives to the aqueous dispersion; however, they provide little detail with respect to these additives.

McDougal et al. discuss numerous additives for subterranean fluids, including the corrosion inhibitors set forth in claims (14 & 33) (see column 5, lines 33-39), the scale inhibitors set forth in claims (15, 16, 18, 19 & 34-36) (see column 4, lines 31-68), the oxygen scavengers set forth in claims (23, 24, 38 & 39) (see column 5, lines 55-59), and the biocides set forth in claims (25 & 40) (see column 5, lines 40-47). The teachings of McDougal et al. demonstrate that these additives are recognized in the art as suitable additives for subterranean well fluids. In light of this, it has been found that the selection of a known material based on its suitability for its intended use supports a *prima facie* obviousness determination – see *MPEP 2144.07*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the additives of claims 14-16, 18, 19, 23-25, 33-36, and 38-40, as taught by McDougal et al., in the emulsion formed from the combined teachings of Foley and Poelker et al. because the teachings of McDougal et al. demonstrate that these additives are recognized in the art as suitable additives for subterranean well fluids.

12. Claims 26 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Foley (US Pat. No. 3,728,277) and Poelker et al. (US Pat. No. 6,100,221) in view of Blezard et al. (US Pat. No. 5,807,810).

Regarding claims 26 and 41, the combined teachings of Foley and Poelker et al. are as set forth above and incorporated herein. Poelker et al. discuss the addition of numerous additives to the aqueous dispersion; however, they provide little detail with respect to these additives.

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Blezard et al. discuss numerous additives for subterranean fluids, including the THP sulfate biocide set forth in claims **(26 & 41)** (see column 15, lines 5-10). The teachings of Blezard et al. demonstrate that this additive is recognized in the art as a suitable additive for subterranean well fluids. In light of this, it has been found that the selection of a known material based on its suitability for its intended use supports a *prima facie* obviousness determination – *see MPEP 2144.07*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the THP sulfate biocide of claims 26 & 41, as taught by Blezard et al., in emulsion formed from the combined teachings of Foley and Poelker et al. because the teachings of Blezard et al. demonstrate that this additive is recognized in the art as a suitable additive for subterranean well fluids.

***Allowable Subject Matter***

13. Claims 42 and 48 are allowed.

14. Claims 43, 44, 49, and 50 would be allowable if rewritten to overcome the objection(s) set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

15. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 42-44, the prior art fails to teach or suggest the method of claims 42-44, wherein the aqueous fluid and the capping fluid are successively added to the wellbore fluid.

Regarding claims 48-50, the prior art fails to teach or suggest the method of claims 48-50, wherein packing fluid (aqueous fluid and capping fluid) are added to the wellbore fluid, and this combination of packing fluid and wellbore fluid are dispensed into a casing bore or annulus.

***Conclusion***

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Gee et al. (US Pat. No. 6,054,415) disclose synthetic hydrocarbons useful for packing fluids.

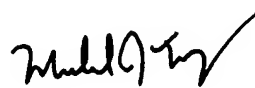
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*Communication*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Feely whose telephone number is 571-272-1086. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Michael J. Feely  
Primary Examiner  
Art Unit 1712

July 21, 2006

**MICHAEL FEELY**  
**PRIMARY EXAMINER**